**No Water off a Duck’s Back**

Oil is a major source of energy in the United States, supplying nearly 40% of our energy needs. However, the widespread use and transport around the world increases chances for oil spills to occur. Oil enters coastal waters from a variety of sources such as natural seeps, recreational vessel discharges, and oil spills. While oil spills occur on a less frequent basis, they still have the potential to release a significant volume in one incident. Almost 14,000 oil spills are reported each year, mobilizing thousands of specially trained emergency response personnel and challenging the best-laid contingency plans. Recent large oils spills in the United States include:

* **2010**- Deepwater Horizon Oil Spill in the Gulf of Mexico, 206 million gallons
* **2005**- Hurricane Katrina in Louisiana, 7 million gallons
* **2000**- Chalk Point in Aquasco, Maryland, 140,000 gallons
* **1990**- Mega Bord in Galveston, Texas, 4 million gallons
* **1989**- Exxon Valdez in Prince William Sound, Alaska, 10+ million gallons

Oil spills can have many negative impacts on wildlife, depending on the toxicity and concentration of the spill. Acute impacts include reduced reproduction, altered development, impaired feeding mechanisms, and/or decreased defense from disease. In addition, oil spills can lead to the disruption of the structure and function of ecosystems.

Today, you will be exploring some of the impacts of oil spills to aquatic birds.

1. Grab a shallow pan, add water and then add 1tsp of oil to the water. What happens when you add oil to water?
	1. Estimate how much area (Length x Width) of the container is covered with oil.
2. Submerge a hard-boiled egg in oil. Describe the hard-boiled egg after:
	1. 5 minutes. Try removing the oil from the shell and then try to peel the shell:
	2. 10 minutes. Try removing the oil from the shell and then try to peel the shell:
	3. What effect could oil have on the eggs of birds nesting near the water?

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1. In the boxes below, sketch and describe your feather. Place the feather in oil for 1-2 minutes then sketch and describe it. Clean the feather in detergent, rinse it in water and dry it. Sketch and compare your feather after the cleaning.

|  |  |  |
| --- | --- | --- |
| *Sketch* |  |  |
| **Feather** | **Oiled Feather** | **Clean Feather** |
| *Description* |  |  |

**Notes:**